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EXAMINER	
CHU, WUTCHUNG	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,734	SRIKRISHNA ET AL.	
	Examiner	Art Unit	
	Wutchung Chu	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for domestic priority under 35 U.S. C. 119(e) is acknowledged.

Response to Amendment

2. This communication is in response to application's amendment filed on 10/1/2007. Claims 1-38 are pending.

3. proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7, 10, 12-38 rejected under 35 U.S.C. 102(e) as being anticipated by Dantu et al. (US2006/0233237).

Regarding claim 1, Dantu et al. disclose a wireless router and method for processing traffic in a wireless communications network **(see paragraph 8 line 1-5)** comprising:

- the access node receiving over a plurality of channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that**

802.11 based standard to support multiple channels), indicators **(see paragraph 63 MPLS labels and routing messages)** from at least one upstream access node **(see paragraph 63 wireless router)**, the indicators providing information of selected upstream paths between each of the upstream access nodes **(see paragraph 63 the wireless router 30 makes forwarding decisions using the radio routing protocol 79 as well as the destination IP address, MPLS labels and call ID based on an IP forwarding table, IP to MPLS path forwarding table, MPLS incoming path to outgoing forwarding table, call ID to LSP ID, a bit map of active LSPs to a given sector for a given call ID, and list of router IDs for a given path)** and upstream gateways **(see paragraph 63 destination and figure 15 box 384 wireless router)**; and

- the access node determining an optimal set of routing paths between the access node and at least one upstream gateway **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, based upon the indicators **(see paragraph 63 MPLS labels and routing messages)**, the optimal set of routing paths including a combination of paths **(see paragraph 63 line 12-20)** over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11**

based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels).

Regarding claim 2, Dantu et al. teaches the plurality of channels comprises transmission channels according to at least two of 802.11(a), 802.11(b), 802.11(g), 802.11(n), 802.16 transmission protocols **(see paragraph 51 line 6 802.11 based and it is inherent for 802.11 based to support multiple channel and paragraph 48 and figure 2 ref32 shows multiple links and each of these links could inherently support different types of 802.11 based WLAN)**.

Regarding claim 3, Dantu et al. teaches the access node determining an optimal set of routing paths comprises determining a path quality of the available paths, and selecting the optimal paths based upon a selection criterion **(see paragraph 63 line 18-20)**.

Regarding claim 4, Dantu et al. teaches the selection criterion is based upon an information throughput of the routing paths **(see paragraph 48 line 1-4)**.

Regarding claim 5, Dantu et al. teaches the selection criterion is based upon a number of hops of the routing paths **(see paragraph 63 line 18-20 and paragraph 96)**.

Regarding claim 6, Dantu et al. teaches the optimal set of routing paths includes at least one of a plurality of possible routing paths **(see paragraph 63 line 10-12)**.

Regarding claim 7, Dantu et al. teaches the optimal set of routing paths includes a combination of paths through multiple upstream access nodes **(see paragraph 56 line 6-9)**.

Regarding claim 10, Dantu et al. teaches the access node **(see paragraph 63 the wireless router)** receives indicators **(see paragraph 63 MPLS labels and routing messages)** over a plurality of channels from single upstream access node **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)**.

Regarding claim 12, Dantu et al. teaches selected upstream paths between each upstream access node and upstream gateways are selected based upon path quality **(see paragraph 63 line 19-20 based on a consistent interpretation o a per-hop cost or other metric)**.

Regarding claim 13, Dantu et al. teaches the path quality is determined by an information throughput of the upstream paths **(see paragraph 48 line 1-4 and paragraph 53 and 54)**.

Regarding claim 14, Dantu et al. teaches the path quality is determined by a number of hops included within the upstream paths **(see paragraph 63 line 1-10 and 96)**.

Regarding claim 15, Dantu et al. teaches further comprising the access node transmitting a modified indicator over a plurality of channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**, the modified indicator **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource updates)** including the optimal set of routing paths between the access node and the at least one upstream gateway **(see paragraph 63)**.

Regarding claim 16, Dantu et al. teaches further comprising:

- Sending a reverse beacon to the gateway **(see paragraph 64 where wireless routers may and communicate and access traffic and control interfaces, and control interfaces may include media gateway controller, WAP server, policy management server, call agent controller, mobile manager, and AAA server)**; and

- Constructing a client tree **(see paragraph 95 and figure 8 box 254 active mobile list)** in the gateway **(see paragraph 87)**, wherein the gateway has at least one path **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)** including multiple

channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)** to all clients **(see paragraph 95 and figure 8 box 254 active mobile list, where a call identifier is stored).**

Regarding claim 17, Dantu et al. teaches method of routing data packets through a wireless mesh network, the mesh network comprising at least one gateway and a plurality of access nodes, the method comprising:

- each access node receiving over a plurality of channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)**, indicators **(see paragraph 63 MPLS labels and routing messages)** from at least one upstream device **(see paragraph 63 destination and figure 15 box 384 wireless router)**;

- if the at least one upstream device is an upstream access node **(see paragraph 63 destination and figure 15 box 384 wireless router)**, the indicators **(see paragraph 63 MPLS labels and routing messages)** providing information of selected upstream paths between each of the upstream access nodes and upstream gateways **(see paragraph 63 the**

wireless router 30 makes forwarding decisions using the radio routing protocol 79 as well as the destination IP address, MPLS labels and call ID based on an IP forwarding table, IP to MPLS path forwarding table, MPLS incoming path to outgoing forwarding table, call ID to LSP ID, a bit map of active LSPs to a given sector for a given call ID, and list of router IDs for a given path); and

- each access node determining an optimal set of routing paths between the access node and at least one upstream gateway **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, based upon the indicators **(see paragraph 63 MPLS labels and routing messages)**, the optimal set of routing paths including a combination of paths **(see paragraph 63 line 12-20)** over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**.

Regarding claim 18, Dantu et al. teaches the plurality of channels comprises transmission channels according to at least one of 802.11(a), 802.11(b), 802.11(g),

802.11(n), 802.16 transmission protocols **(see paragraph 51 line 6 802.11 based and it is inherent for 802.11 based to support multiple channel and paragraph 48 and figure 2 ref32 shows multiple links and each of these links could inherently support different types of 802.11 based WLAN)**.

Regarding claim 19, Dantu et al. teaches the access node determining an optimal set of routing paths comprises determining a path quality of the available paths, and selecting the optimal paths based upon a selection criteria **(see paragraph 63 line 18-20)**.

Regarding claim 20, Dantu et al. teaches the indicators comprise beacons **(see paragraph 63 MPLS labels and routing messages)** originating at the gateways **(see paragraph 64)**.

Regarding claim 21, Dantu et al. teaches the beacons are retransmitted **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource update wherein routing message are being retransmitted to update resource)** by the upstream access nodes after the beacons **(see paragraph 63 MPLS labels and routing messages)** have been modified to include selected upstream routing information **(see paragraph 63 dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**.

Regarding claim 22, Dantu et al. teaches selected upstream paths between each upstream access node and upstream gateways can include a combination of

paths **(see paragraph 63 dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**.

Regarding claim 23, Dantu et al. teaches further comprising the access node transmitting a modified indicator over a plurality of channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**, the modified indicator **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource updates)** including the optimal set of routing paths between the access node and the at least one upstream gateway **(see paragraph 63)**.

Regarding claim 24, Dantu et al. teaches further comprising:

- Sending a reverse beacon to the gateway **(see paragraph 64 where wireless routers may and communicate and access traffic and control interfaces, and control interfaces may include media gateway**

controller, WAP server, policy management server, call agent controller, mobile manager, and AAA server); and

Constructing a client tree **(see paragraph 95 and figure 8 box 254 active mobile list)** in the gateway **(see paragraph 87)**, wherein the gateway has at least one path **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)** including multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)** to all clients **(see paragraph 95 and figure 8 box 254 active mobile list, where a call identifier is stored).**

Regarding claim 25, Dantu et al. teaches an access node comprising:

- a plurality of radios operable on a plurality of transmission channels, the radios receiving over a plurality of channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)**, indicators **(see paragraph 63 MPLS labels and routing messages)** from at least one upstream access node **(see paragraph 63 wireless router)**, the

indicators providing information of selected upstream paths between each of the upstream access nodes **(see paragraph 63 the wireless router 30 makes forwarding decisions using the radio routing protocol 79 as well as the destination IP address, MPLS labels and call ID based on an IP forwarding table, IP to MPLS path forwarding table, MPLS incoming path to outgoing forwarding table, call ID to LSP ID, a bit map of active LSPs to a given sector for a given call ID, and list of router IDs for a given path)** and upstream gateways **(see paragraph 63 destination and figure 15 box 384 wireless router)**; and

- means for determining an optimal set of routing paths between the access node and at least one upstream gateway **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, based upon the indicators **(see paragraph 63 MPLS labels and routing messages)**, the optimal set of routing paths **(see paragraph 63 line 12-20)** including a combination of paths over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**.

Regarding claim 26, Dantu et al. teaches the plurality of channels comprises transmission channels according to at least one of 802.11(a), 802.11(b), 802.11(g), 802.11(n), 802.16 transmission protocols **(see paragraph 51 line 6 802.11 based and it is inherent for 802.11 based to support multiple channel and paragraph 48 and figure 2 ref32 shows multiple links and each of these links could inherently support different types of 802.11 based WLAN)**.

Regarding claim 27, Dantu et al. teaches the access node determining an optimal set of routing paths comprises determining a path quality of the available paths, and selecting the optimal paths based upon a selection criterion **(see paragraph 63 line 18-20)**.

Regarding claim 28, Dantu et al. teaches the indicators comprise beacons **(see paragraph 63 MPLS labels and routing messages)** originating at the gateways **(see paragraph 64)**.

Regarding claim 29, Dantu et al. teaches the beacons are retransmitted **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource update wherein routing message are being retransmitted to update resource)** by the upstream access nodes after the beacons **(see paragraph 63 MPLS labels and routing messages)** have been modified to include selected upstream routing information **(see paragraph 63 dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**.

Regarding claim 30, Dantu et al. teaches selected upstream paths between each upstream access node and upstream gateways can include a combination of paths **(see paragraph 63 dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**.

Regarding claim 31, Dantu et al. teaches further comprising the access node transmitting a modified indicator over a plurality of channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**, the modified indicator **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource updates)** including the optimal set of routing paths between the access node and the at least one upstream gateway **(see paragraph 63)**.

Regarding claim 32, Dantu et al. teaches a mesh network **(see paragraph 73 mesh network)** comprising:

- at least one gateway **(see Dantu et al. figure 2 box 50 media gateway)**, each gateway transmitting through a plurality of transmission beacon **(see paragraph 63 MPLS labels and routing messages)** channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)**;

- a plurality of access nodes **(see figure 2 ref 30 wireless router)**, each access node receiving beacon **(see paragraph 63 MPLS labels and routing messages)** through at least one of the transmission channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)**, each access node selecting routing paths based upon path indicator information within the received beacons **(see paragraph 63 the wireless router 30 makes forwarding decisions using the radio routing protocol 79 as well as the destination IP address, MPLS labels and call ID based on an IP forwarding table, IP to MPLS path forwarding table, MPLS incoming path to outgoing forwarding table, call ID to LSP ID, a bit map of active LSPs to a given sector for a given call ID, and list of router IDs for a given path, and paragraph 63 MPLS labels and routing messages)**, the routing paths selected from

the plurality of transmission channels, the selected set of routing paths **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)** including a combination of paths over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**; and

- a client **(see figure 15 ref380, and paragraph 86 mobile device)**, the client receiving beacons **(see paragraph 63 MPLS labels and routing messages)** through at least one of the transmission channels **(see paragraph 59 the control channels include signaling channel and routing message channel, and paragraph 51 802.11 based WLAN and it is inherent that 802.11 based standard to support multiple channels)** from at least one of the access nodes **(see figure 2 ref 30 wireless router)**.

Regarding claim 33, Dantu et al. teaches the plurality of channels comprises transmission channels according to at least one of 802.11(a), 802.11(b), 802.11(g), 802.11(n), 802.16 transmission protocols **(see paragraph 51 line 6 802.11 based and**

it is inherent for 802.11 based to support multiple channel and paragraph 48 and figure 2 ref32 shows multiple links and each of these links could inherently support different types of 802.11 based WLAN).

Regarding claim 34, Dantu et al. teaches the access node determining an optimal set of routing paths comprises determining a path quality of the available paths, and selecting the optimal paths based upon a selection criterion **(see paragraph 63 line 18-20)**.

Regarding claim 35, Dantu et al. teaches the indicators comprise beacons **(see paragraph 63 MPLS labels and routing messages)** originating at the gateways **(see paragraph 64)**.

Regarding claim 36, Dantu et al. teaches the beacons are retransmitted **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource update wherein routing message are being retransmitted to update resource)** by the upstream access nodes after the beacons **(see paragraph 63 MPLS labels and routing messages)** have been modified to include selected upstream routing information **(see paragraph 63 dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**.

Regarding claim 37, Dantu et al. teaches selected upstream paths between each upstream access node and upstream gateways can include a combination of paths **(see paragraph 63 dynamic changes in the network's topology or**

reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric), over multiple channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**.

Regarding claim 38, Dantu et al. teaches further comprising the access node transmitting a modified indicator over a plurality of channels **(see paragraph 63 optimal paths which are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels)**, the modified indicator **(see paragraph 63 MPLS labels and routing messages, and paragraph 62 resource updates)** including the optimal set of routing paths between the access node and the at least one upstream gateway **(see paragraph 63)**.

Claim Rejections - 35 USC § 103

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 8-9, and 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dantu et al. in view of Patel et al. (US7031266).

Regarding claims 8-9, and 11, Dantu et al. teaches

- (claims 8) the indicators **(see paragraph 63 MPLS labels and routing messages over the routing message channel)**
- (claims 9) the upstream access nodes selecting the optimal set of routing paths based on a persistence of the successfully received beacons **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**.
- (claims 11) selected upstream paths between each upstream access node and upstream gateways include a combination of paths **(see paragraph 63 the radio routing protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric)**, over multiple channels **(see paragraph 63 optimal paths which**

are selected based on a per-hop cost or other metric and paragraph 51 where this link may be 802.11 based which is inherently include multiple channeling functionality and therefore support including a combination of paths over multiple channels).

Dantu et al. disclose all the subject matter of the claimed invention with the exception of:

- beacons originating at the gateways, wherein the gateways broadcast the beacons over multiple channels.
- beacons that are received by the upstream access nodes having a persistence above a threshold are rebroadcast by the upstream access nodes over multiple channels after the beacons have been modified to include selected upstream routing information of the upstream access nodes,
- upstream paths are selected based on a persistence of successfully received broadcast and rebroadcast beacons.

Patel et al. from the same or similar fields of endeavor teaches the use of:

Wireless links RF link may be based on 802.11 based **(see Patel et al. col. 6 line 3-6, 802.11 based which is inherently include multiple channeling functionality)**, and wireless router broadcast a radio discovery message including site impact parameters for analysis by regional wireless routers 30. Each wireless router 30 receiving the radio discovery message will evaluate the site impact parameters and respond with detailed parameters if it is a potential neighbor to the new site. Based on

the responses, the wireless router 30 performs coverage, interference, and parameter analysis to identify and negotiate with neighboring wireless routers. Thus, the parameters identified by each set of analysis are rebroadcast to neighbors for review and approval **(see Patel et al. col. 13 lines 25-40)**.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the broadcasting and rebroadcasting discovery messages as taught by Patel et al. in the wireless router and method for processing traffic in a wireless communications network of Dantu et al. in order to maximizes flexibility of the wireless network and allows new technologies to be readily deployed within the suitable wireless environment **(see Patel. et al. col. 3 line 4-6)**.

Response to Arguments

9. Applicant's arguments, see applicants remark on page 9, filed 10/1/2007, with respect to claim objections on claims 26-31 and 33-38 have been fully considered and are persuasive. The claim objections of claims 26-31 and 33-38 has been withdrawn.

10. Applicant's arguments filed applicant's remark have been fully considered but they are not persuasive.

11. Applicant's arguments with respect to claim 8, 9, and 11 have been considered but are moot in view of the new ground(s) of rejection.

12. **With regard to applicant's remark for claim 1 (page 10)**, applicant submit that Dantu does not shows multiple channels. Dantu et al. disclose a mesh network wherein routers are connected to each other with links, and these wireless RF link may be based on established technologies, or standards such as IS-54 (TDMA), IS-95 CDMA, GMS

and AMPS, 802.11 based WLAN, or new upcoming technologies such as CDMA 2000 and W-CDMA or proprietary radio interfaces **(see paragraph 51),** and as stated in the rejection, 802.11 based can support multiple channels, and therefore each link can be view as multiple channels.

13. **With regard to applicant's remark for claim 1 number 4 (page 11)**, applicant submit that Dantu does not provide indicators that include information of multiple paths to a gateway, wherein the multiple paths comprise multiple channels. Dantu disclose MPLS label and routing messages information to make forwarding decision, and a forwarding table and topology of the network are also maintained **(see paragraph 63)**. Thus, meets the limitation.

14. **With regard to applicant's remark for claim 2 (page 12)**, applicant submit that Dantu does not have channels that are used simultaneously. Dantu in the paragraph 51 states wireless RF link may be 802.11 based and these standard are designed for multiple channels use, and using different frequency ranges to define different channels. Thus, channels can be used simultaneously, and rejection on claim 2 respectfully remains.

15. **With regard to applicant's remark for claim 15 (page 14)**, applicant submit that Dantu does not teach an indicator is modified, or that it is transmitted over multiple channels. In paragraph 63, Dantu states that the radio protocol responds to dynamic changes in the network's topology or reachability state and selects optimal paths based on a consistent interpretation of a per-hop cost or other metric. And therefore message is changeable/modifiable based on the network topology, and thus meets the limitation.

16. **With regard to applicant's remark for claim 15 (page 14)**, applicant submit that Dantu does not teach a plurality of channels. Dantu et al. disclose a mesh network wherein routers are connected to each other with links, and these wireless RF link may be based on established technologies, or standards such as IS-54 (TDMA), IS-95 CDMA, GMS and AMPS, 802.11 based WLAN, or new upcoming technologies such as CDMA 2000 and W-CDMA or proprietary radio interfaces **(see paragraph 51),** and as stated in the rejection, 802.11 based can support multiple channels, and therefore each link can be view as multiple channels.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al. (US6901048) disclose link-level protectioin of traffic in a packet-switched network. Belcea (US7212504) discloses time division protocol for an ad-hoc peer-to-peer radio network having coordinating channel access to shared parallel data channels with separate reservation channel. Corson et al. (US6667957) disclose adaptive routing method for a dynamic network.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wutchung Chu whose telephone number is 571 270 1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan D. Orgad can be reached on 571 272 7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WC/
Wutchung Chu

EDAN . ORGAD
SUPERVISORY PATENT EXAMINER